

WHAT IS CLAIMED IS:

1. A LSI package arranged on a mounting board,
comprising:

a LSI configured to process signals, the LSI
5 having signal input and output terminals;
an interposer configured to mount the LSI, and
including first signal terminals electrically connected
to the signal input and output terminals of the LSI,
second electric terminals for electrically connecting
10 the LSI to the mounting board, internal wirings
electrically connected to the first signal terminals,
and first coupling parts electrically connected to the
internal wirings; and

an interface module including signal transmission
15 lines configured to transmit the signals to outside and
to receive the signals from outside and second coupling
parts electrically connected to the transmission line,
the second coupling parts being electrically connected
to the first coupling parts by means of mechanical
20 contact, respectively.

2. The LSI package according to claim 1, wherein:

the interposer has front and rear surfaces opposed
to each other;

the LSI and the first coupling parts is mounted on
25 the front surface of the interposer and the second
electric terminal is provided on the rear surface of
the interposer; and

the interface module further includes an input-output element configured to output the signals to the transmission line and to input the signals from the transmission line, the second coupling parts electrically connected to the input-output element.

5 3. A LSI package arranged on a mounting board, comprising:

a LSI configured to process signals, the LSI having signal input and output terminals;

10 an interposer configured to mount the LSI, and including first signal terminals electrically connected to the signal input and output terminals of the LSI, second electric terminals for electrically connecting the LSI to the mounting board, internal wirings .

15 electrically connected to the first signal terminals, and first coupling parts electrically connected to the internal wirings; and

20 an interface module including signal transmission lines configured to transmit the signals to outside and to receive the signals from outside and second coupling parts electrically connected to the transmission line, the second coupling parts being electrically connected to the first coupling parts, the first or second or both coupling parts being provided with a mechanism of 25 adjusting the gap height between the interface module and the interposer.

4. A LSI package according to claim 3, wherein:

the interposer has front and rear surfaces opposed to each other;

5 the LSI is mounted on the front surface of the interposer and the second electric terminal is provided on the rear surface of the interposer;

the interface module further includes a heat sink mounted on the LSI and configured to dissipate heat from the LSI and an input-output element configured to output the signals to the transmission line and to
10 input the signals from the transmission line, the second coupling parts being electrically connected to the input-output element, and being electrically connected to the first coupling parts by means of mechanical contact, and when the mechanical contact
15 being maintained, the thermal coupling between the LSI and the heat sink being maintained.

5. A LSI package according to claim 3, wherein,
wherein: one of the first and second coupling parts includes coupling pins and the other of the first and
20 second coupling parts includes insertion structures configured to receive the coupling pins and fix the coupling pins..

6. A LSI package according to claim 3, wherein
the first and second coupling parts includes electrode
25 pads, and an anisotropic conductive film is provided between the electrode pads to couple the electrode pads.

7. A LSI package according to claim 3, wherein
one of the interface module and the interposer includes
a guide pin mounted thereon and the other of the
interface module and the interposer includes a guide
hole to which the guide pin is inserted.

5 8. A LSI package according to claim 1, wherein
the interface module further includes third electric
terminals for electrically connecting the interface
module to the mounting board.

10 9. A LSI package according to claim 4, wherein
the interface module further includes a flexible
electric wiring film coupled between the input-output
element and the second coupling parts.

15 10. A LSI package according to claim 9, further
comprising an anisotropic conductive film which has
reversibility of thickness interposed between the first
and second coupling parts.

20 11. A LSI package according to claim 3, wherein
the interposer has front and rear surfaces opposed to
each other, the LSI is mounted on the front surface of
the interposer, the first coupling parts are arranged
along two sides or four sides of the LSI on the front
surface of the interposer.

25 12. A LSI package according to claim 3, wherein
the signal transmission line includes an optical
waveguides, and the interface module has an optical
element configured to convert the signals to an output

optical signal and guide the output optical signal to the optical waveguide, and interface integrated circuits configured to drive electrically the optical elements.

5 13. A method of assembling a LSI package on a mounting board, comprising:

10 providing an interposer configured to mount a LSI configured to process signals, the LSI having signal input and output terminals, the interposer including first signal terminals electrically connected to the signal input and output terminals of the LSI, second electric terminals, internal wirings electrically connected to the first signal terminals, and first coupling parts electrically connected to the internal 15 wirings;

mounting the interposer to a mounting board, and electrically connecting the LSI to the mounting board through the second electric terminals; and

20 providing an interface module including a signal transmission line configured to transmit the signals and second coupling parts electrically connected to the transmission line; and

25 aligning the second coupling parts to the first coupling parts, mounting the interface module to the mounting board, and electrically and mechanically connecting the second coupling parts to the first coupling parts, respectively.

14. A method according to claim 13, further comprising:

inserting a heat conductive material into the clearance between a heat dissipating heat sink provided on the interface module and a heat dissipating surface of the LSI; and

pushing the heat conductive material layer to have an appropriate thickness in the mounting of the interface module.